usually add much to the distinction of the man of science upon whom it is conferred, but it indicates that the State regards his work as worthy of public honour and encouragement. No greater services can be rendered to the nation than those represented by contributions to natural knowledge, but judging from the list of honours they are least esteemed. The reason is probably that men of science of distinguished eminence are as unknown in the political world as most of the names in the list are unknown outside particular circles. It is apparently necessary to apply science to some art or profession before the State can understand its value. Many members of the medical profession are rightly included in the honours list, and we offer all of them our congratulations. Education also receives some recognition. We notice in the list the names of the following Fellows of the Royal Society:—

Dr. W. Osler, Regius professor of medicine in the University of Oxford, has been made a baronet; Dr. A. J. Evans, honorary keeper of the Ashmolean Museum, has been knighted; the Hon. C. A. Parsons, C.B., has been promoted to K.C.B., and the same title has been conferred upon Major Ronald Ross, professor of tropical medicine in the University of Liverpool, Vice-Admiral A. M. Field, lately hydrographer of the Navy, and Prof. J. A. Ewing, director of naval education. Mr. R. E. Froude, superintendent of the Admiralty Experimental Works; and Prof. A. W. Reinold, late professor of physics in the Royal Naval College, Greenwich, and Colonel H. C. L. Holden, superintendent, Royal Gun and Carriage Factories, Woolwich Arsenal, have been created C.B.'s. Dr. J. Rose Bradford, secretary of the Royal Society, has been appointed a K.C.M.G.

Omitting representatives of medicine in its various branches, other names familiar to many of our readers are:—

Sir John Rhys (Privy Councillor); Sir Boverton Redwood (Baronetcy); Dr. A. W. W. Dale, Vice-Chancellor of the University of Liverpool, Mr. G. H. Ryan, president of the Institute of Actuaries, Dr. J. E. Sandys, Public Orator in the University of Cambridge, and Prof. R. P. Wright, lately professor of agriculture and principal of the West of Scotland Agricultural College (Knighthoods); Prof. M. E. Sadler, professor of education, University of Manchester (C.B.); Dr. R. A. Falconer, president of the University of Toronto, Mr. H. N. Ridley, Director of Gardens and Forests, Straits Settlements, and Dr. T. Zammit, Government analyst, Public Health Department, Malta (C.M.G.'s).

NOTES.

It is now an open secret that the intentions of Parliament for the investigation and cultivation of the local fisheries are being greatly delayed by the apparent reluctance of the Board of Agriculture and Fisheries to cooperate with the Development Fund Commissioners. Questions asked in the House of Commons during the last few months have elicited replies which show that a carefully drafted application, made more than a year ago, by the Lancashire and Western Counties Fisheries Committee, containing definite proposals for the improvement of the local fisheries, has not yet been submitted to the commissioners. On June 20 Sir E. Strachey, replying to Mr. N. Buxton and Mr. Whitehouse, assured the House of Commons that the Board is not neglecting the fisheries. It has applied to the Development Fund Commissioners for a loan of 50,000*l.*, and an annual grant of 8000*l.* for the purpose of coast patrol vessels. It is also asking for a sum of money to enable a special commission to investigate the condition of the inshore fisheries. The secretary to the Board should also have stated that, during the last nine years, two Departmental Committees have made exhaustive reports with regard to the inshore fisheries, and that the Board has now full control of the staff, funds, and resources for fishery investigation enjoyed by the Marine Biological Association until about a year ago. Further, it was not made clear that the subjects mentioned by Mr. Buxton—the investigation of the shell-fisheries and the pollution of tidal waters, the scientific investigation of the territorial water fisheries, and the organisation of the research societies—have all been considered by the fishery committees wherever these things are important enough to require consideration. The urgent need of the present time is that the Development Commissioners should assist the local committees in the prosecution of investigation and cultivation of the inshore fisheries.

The annual report of the Society for the Astronomical Study of Ancient Stone Monuments, Cornwall Branch, shows increasing membership and funds. The report consists mainly of a paper read by Mr. Henry Thomas, one of the secretaries, reviewing observations made at Boscawen-un, Tregaseal, Wendron, and Boskednan circles. In each case the typical circle "does not constitute or comprise in itself a system, but that it is rather the centre of a system, and that the number of stone monuments and barrows which stand at various distances and in various directions, but all within sight of the circle, were not erected and constructed in those positions by mere accident" is "one thing about which there can be no division in our opinions." The circles are never exactly alike, and it seems that not one of those examined is a true circle. It is confessed that no rule has been found to explain the varying distances between the stones in a circle. The apparent irregularity suggests the direction in which a rule might be found, namely, testing the astronomical use of each stone from all available view-points. The next meeting of the society is announced to be held at Rosemoddress Circle, St. Buryan, on June 30.

The late Prof. His, of Leipzig, conceived the idea of establishing in each country a central institute which should have for its chief aim the organisation and the coordination of biological research in its own territory, and serve as a means of cooperation with similar institutions in other countries. In other words, his far-reaching scheme implied the establishment of a regular organised army to attack the problems of living matter, which are being assailed at present only by the wasteful methods of guerilla warfare. During the last decade this proposal has been put to a practical test in the United States and Europe (excepting Great Britain) by the establishment, or the recognition, of certain institutions as centres for coordinating researches upon the brain, under the direction of the "Brain Commission" of the International Association of Academies. The success already attained in this domain of biology has encouraged others to follow in the footsteps of the neurologists. During Whit-week a conference was held in the zoological laboratory of the University of Utrecht for the purpose of founding an International Embryological Institute. Austria, Belgium, England, France, Germany, and Holland were represented at the meeting by workers in the domain of vertebrate embryology; and letters were received from Switzerland and the United States in support of the scheme adumbrated by the conveners of the meeting. Prof. R. Bonnet, of Bonn, was elected first president of the institute, and it was decided that the first aims of the new institution should be (1) the collection of complete series of well-preserved embryos of every mammalian order, and (2) a more intimate cooperation between embryologists, for the purpose of attaining a uniformity in nomenclature and the solution of the special difficulties in this field of investigation.

THE German Emperor has conferred the Order of the Crown, Second Class, upon Sir Ernest Shackleton.

DR. SVEN HEDIN has been elected a correspondant of the Paris Academy of Sciences in the section of geography and navigation.

THE death is announced, in his fifty-fifth year, of Dr. E. B. Voorhees, the director since 1896 of the New Jersey Agricultural College experiment station, and the president, since 1901, of the New Jersey State Board of Agriculture. He had written and lectured extensively on agricultural chemistry and allied subjects.

AT the meeting of the Association Internationale de l'Institut Marey held on June 6th, the resignation of Prof. Kronecker as president was received. The members of the association elected Prof. Charles Richet as president, and Dr. Augustus D. Waller as vice-president. The Institut Marey is under the patronage of the Associated Academies. It is situated in the Parc des Princes, Boulogne-sur-Seine, Paris, and contains laboratories, library, and living rooms for the accommodation of workers. The acting director is Dr. Lucien Bull.

THE Royal Institute of British Architects has awarded the King's gold medal for the promotion of architecture to Dr. W. Dörpfeld, director of the German Archæological Institute, Athens. Owing to Dr. Dörpfeld's serious illness, he was unable to receive the medal in person at the meeting of the institute on June 26, and he has had to abandon his projected visit to this country, in the course of which he was to receive an honorary degree at Cambridge, and speak at a special meeting of the Hellenic Society on July 4.

THE President of the Local Government Board has authorised the following special researches to be paid for out of the annual grant voted by Parliament in aid of scientific investigations concerning the causes and processes of disease:—(1) A research into the causes of premature arterial degeneration in man, by Dr. F. W. Andrewes; (2) an inquiry by Dr. J. H. Thursfield into the causes of death in measles; (3) a comparison by Prof. Nuttall, F.R.S., of the number and kind of fleas found on rats; (4) a continuation by Dr. C. J. Lewis of his investigation into the degree of prevalence and the characteristics of micro-organisms known as non-lactose fermenters in the alimentary canal of infants; (5) an investigation into the same subject by Dr. D. M. Alexander; (6) an inquiry by Dr. Graham Smith into the incidence of non-lactose fermenters in flies in normal surroundings and in surroundings associated with epidemic diarrhœa; (7) a study by Dr. F. A. Bainbridge of the anærobic bacteria in the alimentary canal of infants; (8) an investigation by Dr. Graham Smith into the possibility of pathogenic micro-organisms being taken up by the larva and subsequently distributed by the fly.

THE council of the Royal Society of Arts has decided to make the following awards in connection with the prize offered for the best portable apparatus or appliance for enabling men to undertake rescue work in mines or other places where the air is noxious:—a gold medal to Mr. H. A. Fleuss, for the apparatus submitted by Messrs. Siebe, Gorman and Co.; a gold medal to Mr. W. E. Garforth, in recognition of his efforts to perfect and to secure the adoption of rescue apparatus in mines; a silver medal for the "Draeger" apparatus submitted by Mr. Richard Jacobson; a silver medal for the "Meco" apparatus submitted by the Mining Engineering Company. Of the apparatus submitted to the committee appointed to report upon the subject, four depended on the supply of compressed oxygen, one on the provision of air evaporated from liquid air, and one on the production of oxygen from "oxylith." The principal points of difference, apart from the fundamental principles on which the apparatus are constructed, appear in the comparative lightness and convenience of carriage, and in the arrangements for enabling the wearer to breathe either by the use of a helmet or by means of mouthpieces of various construction. The committee does not consider that the liquid-air apparatus sent in is as yet sufficiently perfect to justify its adoption in preference to the older systems, under which oxygen is supplied from a receptacle containing the gas in a state of compression.

THE annual report of the committee of the Research Defence Society is a record of good work accomplished during the past year. The total number of members and associates, which was about 3360 a year ago, is now about 4600, showing an increase of 1240, as against an increase of 840 in the previous year. There are now twenty-five branches, and this number is expected to be increased in the autumn. Since June of last year more than ninety addresses or lantern-lectures connected with the society have been given in different parts of the kingdom. The following pamphlets and leaflets have also been published:—(1) report of annual general meeting, 1910; (2) Malta fever; (3) sleeping sickness; (4) experiments on dogs; (5) In Memoriam, Louis Pasteur; (6) the facts of the case; (7) experiments during 1909; (8) humanity and science, by the Bishop of Ely; (9) plague in India, by Colonel Bannerman; (10) friends of animals, by Major Marjoribanks; (11) a question of ethics, by Major Marjoribanks; (12) the case presented by the anti-vivisectionists, by Prof. Schäfer. The quantity of literature distributed has greatly increased during the year. Five hundred copies of Colonel Bannerman's pamphlet have just been supplied to the Government of Eastern Bengal and Assam. The total number of pamphlets and leaflets distributed during the year was more than 150,000. A book is in the press giving a full account of the evidence before the Royal Commission. Of course, with all this increase of work, there has been a considerable increase of expenditure, and the committee earnestly appeals to all members and associates of the society to enlist their friends, and thus to extend still further the society's useful work. The honorary secretary, to whom in great measure the success of the society is due, is Mr. Stephen Paget, 21 Ladbroke Square, W.

IN No. 5 of vol. v. of *The American Museums' Journal,* Prof. H. F. Osborn gives an account of an important extension of the American Museum of Natural History, New York, which is to be undertaken shortly. This is nothing less than the erection of a new eastern façade, similar in general character to the southern façade, but somewhat simpler in design. It will contain a second main entrance to the building. When this addition is completed, it will permit of the installation of an extensive ethnographical and also a zoological series arranged geographically. It is also contemplated to arrange a gallery illustrative of the sequence of human evolution; while eventually it is intended that astronomy, geography, and oceanography should be included in the exhibition series.

THE Museo Nacional of Buenos Ayres publishes in vol. xx. of its *Annales* two papers by M. Florentino Ameghino, one entitled "Observations au sujet des notes du Dr. Mochi sur le paléoanthropologie Argentine," the second, "L'Age des formations sédimentaires tertiaires de l'Argentine en relation avec l'antiquité de l'homme." In the first, while admitting Dr. Mochi's services to the cause of prehistoric archæology, the writer, whose paper is fully illustrated by drawings of skulls, conducts a lively criticism of Dr. Mochi's views. This is renewed in the second paper, in which he arrives at the conclusion that the presence of Archtotherium in the quaternary deposits of North America furnishes an additional proof of the immense antiquity of the Pampean and other ancient formations in Argentina, which contain the *débris* of animals of the same group.

In the study of the native languages of the American continent, Mr. A. L. Kroeber, in a paper entitled "Phonetic Constituents of the Native Languages of California," contributed to vol. x. of the publications on American archæology and ethnology of the University of California, has opened up new ground. Hitherto some of the most valuable grammatical study of these tongues has been conducted by ethnologists untrained in phonology. Recently, however, the principles and methods of phonetic research established by European scholars have been applied to the languages of the American Indians, and in this paper the results, already promising, are discussed. This investigation will, it is hoped, not only assist in the study of those Californian dialects which have not been as yet examined, but will help to solve the fundamental problem, whether the linguistic families of America possess any underlying or general features peculiar to themselves as a class.

The Somerset Archæological and Natural History Society has resumed work on the Meare Lake village, under the control of Messrs. A. Bulleid and H. St. George Gray. Besides various late-Celtic relics similar to those already discovered, Mound 7 has produced a class of objects hitherto not found elsewhere, including a number of worked and polished shoulder-bones of animals, the blade-bones being in some cases ornamented in the dot-and-circle pattern. Kimmeridge shale is rather plentiful for a substance imported from Dorset. Little bronze has so far been found, the objects including finger-rings, an awl, and a rivet. Some much-corroded iron objects, such as a knife and chisel, have been unearthed. Human remains are scarce, only two pieces of skull-bone having been found. Pottery is plentiful, and of a type differing in design from that found at the Glastonbury Lake village. As is evident from the number of bones of various kinds, the people occupying this site lived largely on meat. They possessed an ox and horse of a small type, a large variety of dog, and remains of the beaver and otter have been discovered. The relics which have been up to this time found are open to inspection at a temporary museum on the site, whence later on they will be removed to the County Museum at Taunton Castle.

The Edinburgh Medical Journal for June (vi., No. 6) is a centenary number dedicated to the memory of Sir James Y. Simpson, "to whose genius and benevolence the world owes the blessings derived from the use of chloroform for the relief of suffering." It includes a number of portraits and other illustrations, and articles on his life and work by his daughter, Miss Eve Simpson, Sir Alexander Simpson, Sir Halliday Croom, Dr. Berry Hart, and others. Not only did he introduce chloroform, but in addition the uterine sound, mechanical dilatation of the cervix uteri, and various obstetric and gynæcological operations. He was a great and lovable man, and also engaged in the pursuit of many archæological problems.

Livingstone College, Leyton, E., was founded in order to give elementary medical training to missionary workers, and judging by the matter contained in the Coronation number of its year-book, just issued, appears to be admirably fulfilling its functions. Among the achievements of old students may be noted the action of the Rev. E. W. T. Greenshield, who rescued the entire shipwrecked crew of a Dutch whaler in which he was sailing, and for this he has been decorated by the Queen of Holland; whilst in Assam an old student, a missionary of the Baptist Missionary Society, has discovered a new mosquito, henceforth to be known as the *Culex pettigrewii*.

Hides and skins coming from some parts of the world, *e.g.* Siberia, China, Persia, and Asia Minor, are liable to be infected with anthrax, and those handling them are liable to infection. Many methods have been suggested for treating the skins so as to destroy the anthrax spores without damaging the material, but none is satisfactory. In a valuable report to the Leathersellers' Company, Dr. Constant Ponder discusses the incidence of anthrax amongst those engaged in the hide, skin, and leather industries, and has investigated various processes proposed for the sterilisation of anthrax spores. Among these, a process recently introduced by Mr. Seymour-Jones has been tested. It consists in soaking the skins for twenty-four hours in a solution containing 1 per cent. of formic acid and 1 in 5000 of mercuric chloride, after which the skins are treated with a strong brine solution. The method has no deleterious action, the skins can be perfectly tanned afterwards, and it is generally efficient in destroying anthrax spores. Probably a slightly increased amount of mercuric chloride would be an advantage.

After a long period of quiescence, plague has once more appeared among the rats in the Port of London. As mentioned in a note in Nature of June 22 (p. 562), plague-infected rats have been found for three years in succession in the port, viz. in the West India, the South-West India, and the Royal Albert, Docks. The present site of the infection is a wharf on the banks of the Thames at Wapping, less than a mile from the Tower Bridge. Twelve dead rats were found at this wharf, of which four at least were plague-infected. The existence of plague in wharves and warehouses, which are not inhabited at night, may be regarded with comparative equanimity so long as it does not spread to the rats in the plexus of mean streets which lie behind. The real cause for anxiety is the steadily widening area over which plague-infected rats have now been found. The fact that no cases of human plague have lately been recorded in England is not of much significance, because the period for human infection is only now commencing, coinciding as it does with the increase of the rat-fleas. A writer in *The Times* of June 17 in an able article thus summarises the occurrence:—"While the recurrence in the Port of London of an infection which has been already noted in three successive years can be regarded without excitement, it has its serious aspects. It cannot be too strongly urged that the mere presence of plague in England among rats, in however limited a form, may become a matter of sinister importance. If the Wapping outbreak marks a slowly widening circle of infection, it would be in exact accord with Indian experience, for plague has sometimes taken months, or even years, to pass through the rats of a single village. So long as the rats are infected, there must always be some danger to mankind."

The second number of vol. iv. of the Journal of the Federated Malay States Museums contains four papers, by

Mr. C. B. Kloss and other naturalists, on local mammals and birds.

WE have to acknowledge the receipt of the report of the Field Museum of Natural History, Chicago, for 1910, in which it is stated that a steady development of that institution is in progress, with a continued increase of its utility as an educating centre. A marked extension took place during the year in the anthropological department. The report contains several illustrations, among which attention may be directed to a photograph of a group of three gorillas recently added to the exhibition series.

POULTRY-BREEDERS should be interested in an article on the inheritance of fecundity in domesticated fowls, contributed by Dr. Raymond Pearl to the June number of *The American Naturalist.* The article is so full of technicalities that it is difficult to give a summary of the conclusions intelligible to the ordinary reader. The author is, however, of opinion that different degrees of fecundity are inherited by fowls, although it is extremely difficult, if not impossible, to isolate and develop a strain with great egg-laying capacity. It is further stated that the inheritance is probably in complete "accord with Johannsen's concept of genotypes." It may be added that the "genotype," or "pure line theory," is discussed in a second article in the same issue by Dr. J. A. Harris, who is disposed to doubt its validity.

VOL. xiii. of the *Rapports et Proces-Verbaux* of the International Council for the Exploration of the Sea contains the administrative report of the eighth year (1909–10) of the international cooperation and the proceedings of the ninth meeting of the council, which was held in Copenhagen in September, 1910. Special interest attaches to the presence at this meeting as guests of the Deputy-Commissioner of Fisheries for the United States of America, Dr. Hugh M. Smith, and the Inspector-General of Fisheries for France, M. Fabre Domergue. It would be of the very greatest value to the success of the investigations if the area to be explored could be extended to the waters of the North Atlantic, with the cooperation of the French and American Governments. The reports, which are appended to the proceedings of the meeting, are of considerable importance, although the general report on plaice fisheries, which it is hoped will bring to a head much of the most important work which has been carried out in connection with the investigations, is not yet available. Dr. Hoek gives a summary account of the quantitative distribution of the eggs and larvæ of the gadoids in the North Sea, and Prof. D'Arcy Thompson furnishes a second report on the later stages of these fishes. The flat fishes are similarly treated by Dr. Ehrenbaum and Dr. A. T. Masterman.

THE REV. HILDERIC FRIEND has reported to the director of Kew Gardens the discovery of two new annelids in earth received from Peru. The first is an Enchytræid, *Fridericia peruviana*, Friend, the other being a new species of Trigaster. It differs from the known species in its small dimensions, as well as in the position of the gizzards, the hearts, and the intestine, and is named *Trigaster minima*, Friend. This worm has the gizzards in segments 9, 10, 11, the principal hearts are in 12–15, and the intestine begins in 19, while the length is 15 mm., as compared with 250 mm. in *Trigaster lankesteri*, Benham.

IN NATURE of May 11 (p. 356) attention was directed to the proposal of the Bombay Natural History Society to start an investigation into the mammals of British India. Mr. N. Annandale writes from Calcutta to point out that a real zoological survey, in which the more obscure groups of animals (which have no less scientific value than the mammals) were included, would cost a great deal more than 2000*l.*, for which an appeal was made, although preliminary work has been done as regards certain groups. He refers to Colonel Alcock's recent memoir on the fresh-water crabs, which it is hoped will be followed shortly by others on different groups of terrestrial and aquatic organisms.

IN *The Journal of Economic Biology* (vol. vi., No. 2) Mr. E. E. Green presents an enumeration of several species of Coccidæ, with diagnoses of those new to science, collected on rubber plants in Ceylon. *Lecanium viride* was the most important found on *Hevea brasiliensis*, but as it occurred chiefly on young trees it was amenable to treatment by spraying. A new species, *Inglisia castilloae*, was perhaps the most dangerous, as it spread from the Castilloa to tea shrubs in the vicinity, but it did not attack the closely adjacent Hevea trees. Another of the new species is a lac insect that spread thickly on a Landolphia vine. A second item of interest to entomologists is supplied by the article in which Mr. H. Maxwell-Lefroy offers advice on the training of British entomologists, with special reference to students prepared to take service in British colonies or possessions. He insists particularly on the desirability of infusing a more "economic" character into the student's training.

THE interesting account of his botanical expedition to Lower Siam communicated by Mr. H. N. Ridley is continued in *The Gardener's Chronicle* (June 17 and 24) Many new or remarkable plants were collected near Kanga, in the province of Perlis. Three species of Holarrhena, small apocynaceous shrubs, a Dischidia, and a dwarf Lastræa are new to science; *Cycas siamensis*, characterised by its curved white stems, and a swollen-stemmed balsam, *Impatiens mirabilis*, were particularly striking as they grew on the limestone hills, and the orchid *Dendrobium crumentatum*, which flowers simultaneously over a whole area, was observed on its flowering day. Further north, near Setul, several Australian types were discovered, the most remarkable being a new species of Thysanotus, a liliaceous genus confined to Australia except for one Philippine species. The author concludes that the boundary between the Malayan and Burmese flora is unusually distinct, and lies near the town of Alorstar in Kedah.

A PRELIMINARY study of the flora on different grass plots, with the object of ascertaining whether a botanical criterion of their value as pasture lands can be evolved, is reported in the Scientific Bulletin (No. 2) of the Royal Agricultural College, Cirencester. A complete catalogue of species was first compiled, and then the species were arranged under the three groups of grasses, Leguminosæ, and general plants according to their relative abundance. Data were thereby obtained for a comparison of the proportion of valuable grasses and leguminous plants to the less valuable and worthless species. Thus it was found that where the bottom grasses were luxuriant only nineteen species in all were recorded, whereas the total number of species exceeded fifty on the poor lands. Also generalisations are deduced from the growth of allied species; thus *Bromus erectus* was strongest on the dry oolitic soil, while *Holcus lanatus* predominated on wet areas.

IN an interesting report on the "Barometer in Jamaica," Mr. Maxwell Hall discusses the determination of the differences of height between pairs of stations in Jamaica from meteorological observations, and he calculates certain tables for use in the application to this problem of a form of Laplace's formula slightly different from that usually adopted. Mr. Hall finds differences in the values obtained for the height according to the time of day and the season of the year at which the observations of pressure, temperature, and humidity are made. The values are generally larger near midday and in summer than at other times and seasons, a result not altogether surprising. The temperature enters into the determination of height through the expression $\int_{z_1}^{z_2} \frac{dz}{T}$, and there is clearly room for error if this is taken to be $(z_2-z_1)/T_M$ where $T_M=\frac{1}{2}(T_1+T_2)$ and T_1, T_2 are the temperatures at the lower and upper stations respectively. Mr. Hall elaborates an empirical method for correcting the value of T_M obtained in this way, in order to eradicate the differences found. In this connection it may be mentioned that recent determinations of heights in the Tyrol have furnished results closely agreeing with the values obtained by levelling. In these cases, however, mean values were used, and an intermediate station was available. Mr. Hall uses the value 60,159 feet in the hypsometric formula, instead of 60,369 feet, the value adopted in the International Tables, but does not state his reason for preferring the smaller value.

IN *The Electrician* for June 9, Dr. R. Beattie describes a method of determining the coefficients in the Fourier series for a curve, which should extend the use of such series amongst those who have not had a mechanical analyser at command and have been unwilling to go through the laborious process of determining the coefficients arithmetically. It will be remembered that the latter process consists in measuring the ordinates of the curve at regular intervals, multiplying these by the sines or cosines of certain angles, and taking the mean of the products. Dr. Beattie's suggestion is to measure the ordinates on scales graduated so as to read the products direct, and thus reduce the work to addition. Once the necessary scales are available the method will, we anticipate, be used extensively.

THE Department of Commerce and Labour, Coast and Geodetic Survey, Washington, has issued a volume of "Directions for Magnetic Measurements," by Mr. Daniel L. Hazard, of the Division of Terrestrial Magnetism. This extends to 131 pages, and contains instructions for the absolute observation of the magnetic elements with instruments of the various types used by the Coast and Geodetic Survey. The instruments are described with illustrations, and there is a discussion of the determination of the several constants. This is followed by a series of "directions for operating a magnetic observatory," which includes an account of Eschenhagen magnetographs and the methods of standardising the curves. At the end there are a series of tables intended to assist in the reduction of the absolute observations, which include some particulars of the diurnal inequalities recorded at the observatories belonging to the Coast and Geodetic Survey.

THE U.S. Coast and Geodetic Survey's "Results of Magnetic Observations made . . . between July 1, 1909, and June 30, 1910," gives in about seventy pages an account of a year's work in terrestrial magnetism in the United States. Observations were made at 241 stations, including a number previously occupied, so that numerous secular change data were obtained. A good many magnetic observations were also made at sea by the Survey's vessels. Two-thirds of the space is devoted to descriptions of the stations occupied. The situation of some of these seems a little unusual. Several, for instance, are in cemeteries, the exact site being marked by small pillars dated and lettered U.S.C. and G.S., the coordinates of which in some cases are given in terms of the distances from adjacent tombstones. If the absence of iron can be relied on, and sentiment does not count, it cannot be denied that a good deal can be said in favour of the practice, but one rather wonders how it strikes the average unscientific American.

THE June issue of *Terrestrial Magnetism and Atmospheric Electricity* contains particulars of comparisons of magnetic instruments made by observers of the Carnegie Institution, Washington, between 1905 and 1910, at a number of stations in North and South America, Asia, Australia, and Europe. It also gives voluminous lists of data which the editor, Dr. Bauer, has received from a number of observatories in response to a request for information as to the exact times of commencement of fifteen magnetic disturbances which occurred between 1906 and 1909. The object is to settle a controversy which took place recently in the columns of NATURE as to the rate of propagation of these disturbances round the earth. A further list of data is to appear in the next number of the magazine. The discussion by Dr. Bauer will be awaited with interest. In a reference to the meeting of the International Meteorological Committee, held last September in Berlin, the removal of atmospheric electricity from the domain of the Commission on Terrestrial Magnetism is adversely criticised. A reference to the "passing of the Kew Magnetic Observatory" leads to the statement that "the testing and standardising of magnetic instruments is shortly to be turned over to the National Physical Laboratory." This seems rather in want of explanation.

A CORRESPONDENT asks where he could obtain a portable and very sensitive instrument with which to measure the acceleration of gravity. In reply to the inquiry, Dr. C. Chree has been good enough to provide the following information :—"The determination of *absolute* values of *g* (acceleration of gravity) with high precision is an attempt very rarely made. For a good many years past relative determinations have almost all been made with half-second pendulums. The half-second pendulums originally obtained for the Indian Survey, which were swung at Kew in 1903, are described in Major Lenox Conyngham's paper on the subject (Roy. Soc. Proc., vol. lxxviii., 1906, p. 241) as 'made by E. Schneider, of Vienna, after Col. von Sterneck's design.' He also says: 'The clock belonging to the apparatus was constructed by Strasser and Rohde, of Glashütte; its pendulum, made by Riefler, of Munich, is of invar.' At the present moment Prof. Helmert, of Potsdam, is considered the leading authority on the subject. Of late years pendulums of invar have been tried at Potsdam, as temperature uncertainties in the field are amongst the most troublesome. The usual procedure is to swing the pendulums at a base station—*e.g.* the observatory at Potsdam—where *g* is supposed to be known, and thence to deduce its value at any other place where the pendulums are subsequently swung."

MESSRS. CASSELL AND CO., LTD., have commenced a reissue of Mr. W. F. Kirby's well-known "Butterflies and Moths of Europe," to be completed in thirty-two weekly parts. Part i. appeared on May 25.

THE Admiralty has ordered from Messrs. Newton and Co., of 3 Fleet Street, London, ten sets of X-ray apparatus to be supplied to the new battleships for service afloat. We understand that these will make altogether thirty complete installations that this firm alone has recently supplied to the ships of the Royal Navy.